Claims

1. A method of influencing an actual engine torque delivered by an engine (6) which is part of drive means (7) of a vehicle, wherein the actual engine torque (M_i), at an uphill oriented starting operation or at an uphill travel, is determined as a function of a determined roadway inclination (Θ^*) which represents a roadway inclination in the travel direction,
characterized in that
a brake pedal variable (s) is determined which represents a driver-caused deflection of a brake pedal (9) cooperating with braking means (30) of the vehicle, and the actual engine torque (M_i) delivered by the engine (6) is further determined as a function of the determined brake pedal variable (s).

2. The method as defined in claim 1,
characterized in that
the actual engine torque (M_i) is determined in such a manner as a function of the roadway inclination (Θ^*) that the vehicle assumes, independently from the roadway inclination, a low travel speed (v_f) which, in particular, has a typical magnitude for a creeping motion of a vehicle provided with an automatic transmission or an automatic gearbox or a transmission with an automatic clutch.

3. The method as defined in claim 1,
characterized in that

a magnitude for a nominal engine torque (M_s) is determined as a function of the roadway inclination (Θ*) and the brake pedal variable (s) and that the actual engine torque (M_i) is set in accordance with the determined magnitude of the nominal engine torque (M_s).

4. The method as defined in claim 3, characterized in that the brake pedal variable (s) has a range defined by a lower limit (s_a) corresponding to the non-actuated state of the brake pedal (9) and an upper limit (s_b) corresponding to a maximum possible deflection of the brake pedal (9), wherein the magnitude of the nominal engine torque (M_s) decreases from a maximum magnitude ($M_{s,max}$) at the lower limit (s_a) toward the upper limit (s_b).

5. The method as defined in claim 4, characterized in that for magnitudes of the brake pedal variable (s) which correspond to an intermediate magnitude (s_0) lying in the range between the lower limit (s_a) and the upper limit (s_b), the nominal engine torque (M_s) assumes a constant, particularly zero, magnitude.

6. The method as defined in claim 4, characterized in that the maximum nominal engine torque ($M_{s,max}$) as a function of the roadway inclination (Θ*) is determined by the equation $M_{s,max} = M^0_{s,max} + k.|\Theta^*|$, wherein k is a factorial function and $M^0_{s,max}$ is the

engine torque (M_s) obtained by the idling regulator of the engine at a set travel stage on a roadway without inclination.

7. The method as defined in claim 6, characterized in that the factorial function (k) is selected in such a manner that at least in the lower limit (s_a) of the brake pedal variable (s) the vehicle assumes, independently from the roadway inclination, a low travel speed (v_f) which is particularly typical for a creeping motion of a vehicle having an automatic transmission, or an automatic gearbox or a transmission with an automatic clutch.

8. The method as defined in claim 3, characterized in that the nominal engine torque (M_s) is additionally determined as a function of a vehicle mass variable representing the mass of the vehicle and/or as a function of a rolling resistance variable characterizing the rolling resistance of the driven wheels traveling on the roadway.

9. The method as defined in claim 4, characterized in that as a function of the brake pedal variable (s), in the wheel braking devices (29) of the vehicle a braking force (F_v) is generated which increases from the lower limit (s_a) toward the upper limit (s_b).

10. The method as defined in claim 5, characterized in that the intermediate magnitude (s_0) of the brake pedal variable (s) is determined as a function of the roadway inclination (Θ^*).

11. The method as defined in claim 5, characterized in that the intermediate magnitude (s_0) is determined as a function of the roadway inclination (Θ^*) in such a manner that the vehicle is maintained at a standstill on an inclined roadway by the braking force (F_v) generated in the wheel braking devices (29) at the intermediate magnitude (s_0).

12. The method as defined in claim 11, characterized in that the intermediate magnitude (s_0) is determined as a function of the roadway inclination (Θ^*) in such a manner that when the magnitude of the brake pedal variable (s) falls below the intermediate magnitude (s_0) toward the lower limit (s_a), the braking force (F_v) generated in the wheel braking devices (29) and the actual engine torque (M_i) effected by the nominal engine torque (M_s) maintain the vehicle at a standstill on an inclined roadway oriented in a driver-selected direction, until the actual engine torque (M_i) effected correspondingly to the nominal engine torque (M_s) becomes large enough at a sufficiently small magnitude of the brake pedal variable (s) for setting the vehicle in uphill motion on the inclined roadway.

13. The method as defined in claim 1, characterized in that the roadway inclination (Θ^*) is determined from a longitudinal roadway inclination (Θ) which represents a roadway inclination in the length direction of the vehicle, a transverse roadway inclination (Φ) which represents a roadway inclination in the transverse direction of the vehicle and a yaw angle (β) which represents a yaw angle of the vehicle.

14. The method as defined in claim 13, characterized in that the longitudinal roadway inclination (Θ) is determined from a difference between a total acceleration or a total deceleration in the length direction of the vehicle and a longitudinal vehicle acceleration or a longitudinal vehicle deceleration, obtained from a speed change in the length direction of the vehicle and/or the transverse roadway inclination (Φ) is determined from a difference between a total acceleration or a total deceleration in the transverse direction of the vehicle, obtained from a speed change in the transverse direction of the vehicle.

15. The method as defined in claim 14, characterized in that the longitudinal vehicle acceleration or the longitudinal vehicle deceleration and/or the transverse vehicle acceleration or the transverse

vehicle deceleration are determined as a function of the change in time of a wheel rpm variable representing the wheel rpm of at least one of the driven vehicle wheels, while a steering angle (δ) is taken into account which represents a steering angle set by a steering wheel (25) at the steerable vehicle wheels.

16. The method as defined in claim 1, characterized in that a recognition of the uphill-directed start operation or uphill travel is effected by an evaluation of a gear shift variable (x_g) which represents the gear set by the driver or a travel stage variable (x_g') which represents the automatically set travel stage and by an evaluation of the roadway inclination (Θ^*).

17. The method as defined in claim 3, characterized in that the influencing of the actual engine torque (M_i) is effected in a previously determined travel speed range, and the influencing of the actual engine torque (M_i) decreases with increasing travel speed (v_f).

18. An apparatus for influencing an actual engine torque delivered by an engine (6) which forms part of drive means (7) of a vehicle, wherein the apparatus comprises means (15, 16, 17, 25, 26, 27) with which a roadway inclination (Θ^*) representing a roadway inclination in the travel direction is determined

and further comprises means (8, 17) with which the actual engine torque (M_i) is determined during an uphill-directed start operation or an uphill travel as a function of the determined roadway inclination (Θ^*),

characterized in that

means (9, 10, 17) are provided with which a brake pedal variable (s) is determined which represents a driver-caused deflection of a brake pedal (9) cooperating with braking means (29) of the vehicle and that the actual engine torque (M_i) delivered by the engine (6) is further determined as a function of the determined brake pedal variable (s).